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Published in:
Growth Hormone & IGF Research

DOI:
[10.1016/j.ghir.2017.05.001](https://doi.org/10.1016/j.ghir.2017.05.001)

Published: 01/06/2017

Document Version
Peer reviewed version

[Link to publication on the UWS Academic Portal](#)

Citation for published version (APA):
Lewitt, M., & Hulting, A-L. (2017). Professor Kerstin Hall (1929–1917): pioneer in the field of growth hormone and IGF research. *Growth Hormone & IGF Research*, 34, 28-30. <https://doi.org/10.1016/j.ghir.2017.05.001>

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Professor Kerstin Hall (1929-1917): Pioneer in the field of Growth Hormone and IGF

Research

Professor Kerstin Hall, a pioneer in the GH and IGF field, died 29 March 2017 at the age of 87 years. She was still an active member of the medical research community, inspired generations of researchers in the IGF field and had an important influence on endocrinology research in Sweden. This is a personal view of her impact.

Kerstin Hall's contributions to research and to the clinical practice of endocrinology reflect the extent of her scientific curiosity, commitment and integrity. Brilliant academically, she trained as a surgeon before moving into internal medicine. She held the Chair in Endocrinology at Karolinska Institutet (1980-1995), was a member of the Nobel Committee for Physiology or Medicine (*Photo A: Kerstin Hall with colleagues on the Nobel Committee for Physiology or Medicine, approx. 1985; photographer unknown¹*) and a Member of the Royal Swedish Academy of Sciences since 1989. On being awarded the Grand Silver Medal at Karolinska Institutet in 2011 her "genuine interest for research, intellectual sharpness and breadth of knowledge" were highlighted for their importance in "driving forward endocrinology research in Sweden" [1].

In our conversations, Kerstin spoke often of the early days in IGF research, and reflected on the characteristics of the cultures that fostered a generation of ideas and a healthy climate for research and innovation. She recalled the 1960s and 70s as a time of open communication between research groups and, in 1972, joined Daughaday, Raben, Salmon, Van den Brande and Van Wyk in proposing that "sulfation factor" be given the name "somatomedin" [2]. Although there was competitiveness at that time, particularly between

¹ <http://www.nobelprizemedicine.org/selecting-laureates/history/>

the somatomedin groups and those investigating the insulin-like activity of plasma, she perceived that problems and ideas were openly and enthusiastically discussed and, consequently, the field thrived. Kerstin spoke of her conscious attempts to shift the focus away from competition and regarded this as a valuable approach that women often bring to the research environment. Professor Rolf Luft created an environment at Karolinska Institutet that allowed Kerstin Hall to thrive as a researcher. He was her doctoral supervisor and a role model who allowed her to develop independence. Indeed, although she fully acknowledged his interest and support [3], he was not co-author on any of the publications included in her thesis [4-9].

A philosophy of open collaboration underpinned her work with industry, and Kerstin Hall had fruitful collaborations around GH and IGFs, first with Bertil Åberg and later Linda Fryklund and Anna Skottner of Kabi AB. She recalled that the work was curiosity-driven as well as responding to clinical need e.g. management of GH deficiency. Important collaborators in the clinic included Martin Ritzén in the Department of Paediatrics, Karolinska Hospital and later Marja Thorén in the Department of Endocrinology. There were also researchers from across the world working with Kerstin Hall in Stockholm in those earlier years, notably Kazue Takano from Japan, who was her doctoral student, and Vicki Sara, who joined as a postdoctoral researcher from Australia. Kerstin continued in a role of mentor and friend and these pioneering women often returned to Stockholm to visit her.

With the isolation and characterisation of IGFBP-1 in the 1980s and the creation of a radioimmunoassay in collaboration with Hans Jörnvall, Guilherme Póvoa and others [10-12], this somatomedin-binding protein became a key focus of her research for the rest of her life. Recombinant materials generously given to her by Kabi AB continue to be used for the

IGFBP-1 assay at Karolinska Hospital, and she was quietly pleased to have made a very personal contribution, as the individual with multiple myeloma whose urine contained activity that specifically cleaved IGFBP-1 [13].

She stood for gender equality, and recalls how she encouraged male colleagues to share parental leave well before it was the norm. To many she was an intimidating figure, but not to those who knew her well. Kerstin was someone who defended ideals, and had the highest integrity, but she always saw the best in people and was quick to forgive. Perhaps her biggest failing was that she didn't really like writing, although she certainly enjoyed analysing data (*Photo B: Kerstin Hall at work in 2006, photographer ML*) and discussing what could be written. During the last few years of her life she seemed reluctant to finalise manuscripts and therefore let go of the data that was her passion and kept her mind alive. Through a broad understanding of science and statistics, combined with sound clinical judgement, she was able to view problems from multiple perspectives. These qualities included also a willingness to share openly and to nurture the career of others through collaborations and mentorship. Kerstin Hall will be missed by many in the global medical community.

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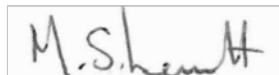
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Moira Lewitt

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26 April 2017